

The Relations among Psychological Well-being, Religion, and Personality in a National Sample (MIDUS 3)

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Abstract

There are many studies present personality is a strong predictor of psychological well-being and an increasing number of studies have reported that religion can be positively related to psychological well-being. However, they have been researched together by few psychologists. This study attempted to find the relations among personality, religion, and psychological well-being by using a national sample (MIDUS 3). The Big Five personality traits, the Ryff's six-factor model, and religious identification were used in measuring personality, psychological well-being, and religion respectively. Based on the results of bivariate correlation analysis, hierarchical multiple regression analysis, and path analysis, personality can significantly predict psychological well-being and religion is a weak mediator between personality traits and some dimensions of psychological well-being.

Key words: Psychological Well-being; Religion; Personality

1 Introduction

Well-being, as an ultimate goal in normal life, has received more and more attention and become one of the most fruitful topics in positive psychology. Since Wanner Wilson published article *Correlates of Avowed Happiness* in 1967, the study of well-being in psychology has developed from a description stage to construction stage of theory, and it has now approached the measure development stage (Diener, 1984). Based on different understandings of happiness in philosophy, there are two research orientations in well-being which are subjective well-being and psychological well-being. Because they have different definitions of happiness, their research models will differ. Subjective well-being mainly includes three classic evaluation indicators, namely positive emotion, negative emotion and general life satisfaction (Diener, et al., 1999; Waterman, 1993) and it depends on self-evaluation. However, psychological well-being is based on the value system of psychologists and evaluates individual happiness based on objective criteria which makes it have stronger theoretical guidance.

Research shows that personality, as a kind of stable biological trait, is one of the most stable and powerful predictors of well-being in the causal chain. Nevertheless, these studies generally define happiness as the subjective well-being and focus on exploring or repeated verification of the relationship between personality traits and subjective well-being, but rarely involve the relationship between personality and psychological well-being. Increasing studies have found positive relations between subjective well-being and some aspects of religion. Although personality traits and religion are confirmed as predictors of well-being in many existing studies, it lacks research which examines them together in predicting psychological well-being (Aghababaei, et al., 2015). It would be meaningful to find whether the links between religion and psychological well-being remain significant after controlling for personality traits which is usually regarded as a strong positive predictor of psychological well-being.

Therefore, this study aims to find the relations among personality traits, religion, and

psychological well-being in a existed sample of US adults (MIDUS 3). The hypothesis of this study is that after controlling for demographic variables, the personality has a strong predictive power for psychological well-being and its relationship with psychological well-being could be mediated by religion.

2 Literature Review

2.1 Psychological Well-being

In recent years, psychologists have been trying to study people's mental health from a different perspective which sets off a new research trend in psychology area: positive psychology. Positive psychology is a science that has assembled the study of human virtue and strength (Sheldon and King, 2001). Seligman, as an initiator of the positive psychology movement, thought that the sacred mission of psychology is to guide people toward happiness. He regarded the present age as a special time, a time of great changes and challenges, and contemporary psychology is in a new historical transition period (Seligman and Csikszentmihalyi, 2000; Seligman, 2002). This particular stage has given the psychologist a special mission that they should make contributions to society and help lead people to happiness -- a great pursuit of human beings which makes well-being become a key area. Since world war II, psychology was generally concerned with people's psychological problems, hoping to make a scientific explanation of some psychological diseases from the perspective of psychology and provide better solutions to heal people's trauma (Seligman and Csikszentmihalyi, 2000). With the creation of positive psychology, psychologists has been aware of the limitations of current research in psychology and began to realize that psychology could not only pay attention to mental illness, but also to help people find their needs at a spiritual level which can "improve quality of life and prevent the pathologies that arise when life is barren and meaningless" (Seligman and Csikszentmihalyi, 2000, p.5).

There are two main conceptions of happiness in philosophy theories which are hedonic enjoyment and eudaimonia (Waterman, 1993). Hedonic happiness is more like the meaning of the word happiness when people choose to use it in daily life which is quite a subjective term to describe happy or pleasant and also contains the belief that once a individual has acquired

the important things he wants, and some pleasant effects would be usually associated with this belief (Kraut, 1979). However, eudaimonia defines that happiness not just means pleasure, but also includes “potentialities of each person, the realization of which represents the greatest fulfilment in living of which each is capable” (Waterman, 1993, p.678). Therefore, two different well-being research orientations which are subjective well-being and psychological well-being are derived from those two philosophical branches about happiness. The different philosophy foundations of subjective well-being and psychological well-being lead to two research models, namely, there are huge differences in the entry point, evaluation index or criteria of well-being.

In the discussion of the structure of psychological well-being, the researchers have not reached a consensus and different psychologists construct their own structures to represent psychological well-being based on their different understandings of how to attain self-realization. For instance, according to Waterman (1993), people are always trying to live as their true self and achieve potentialities which Waterman called personal expressiveness, therefore the happiness can be produced in this process. He devised The Personally Expressive Activities Questionnaire (PEAQ) to find the correlation between the happiness and personal expressiveness. The self-determination theory (SDT) (Ryan and Deci, 2000) is another model which uses eudaimonia as a central concept. It focuses on human’s inner growth and innate psychological needs and summarizes three fundamental factors (need for competence, need for relatedness, need for autonomy) in psychological well-being.

The six-factor model of psychological well-being has been widely accepted in related psychological well-being research. Ryff (1989) reviewed and summarized many former theories such as “Erikson’s (1959) psychosocial stage model, Buhler’s basic life tendencies that work toward the fulfilment of life (Buhler, 1935; Buhler and Massarik, 1968), and Neugarten’s (1968, 1973) descriptions of personality change in adulthood and old age” (Ryff, 1989, p.1070) in developmental psychology and also drew from theories about positive psychological functioning. The most common representative elements were extracted from those theories to use as indexes to evaluate psychological well-being and they were confirmed

in positive research (Ryff, 1989; Ryff and Keyes, 1995). The six psychological well-being dimensions include self-acceptance, positive relation with others, autonomy, environmental mastery, purpose in life, and personal growth. In these dimensions, Ryff (1998) thought that purpose in life and positive relation with others are the most important factors to positive human health.

The development and research of psychological well-being can compensate for the limitations of subjective well-being in both concept and measurement. Psychological well-being is not just focusing on people's emotional experiences, the more important thing is that it pays attention to the self-development and growth of people. It defines and interprets happiness from different perspective, which has more comprehensive and profound understanding of happiness. Its structure and verification are based on prior theories rather than empirical research, so it has stronger theoretical guidance. Meanwhile, since the measurement of psychological well-being involves less emotional response, it is more stable and less susceptible to life situations which are changeable. The multi-dimensional structure can also reflect people's living conditions more accurately than the overall life satisfaction which has just one single dimension (Ryff, 1989; Ryff and Keyes, 1995).

2.2 The Big Five personality traits and their association with psychological well-being

The Five Factor Model (FFM) is an influential trait theory of personality structure. It defines personality along five continuums and these five broad traits can be used to explain and predict the behaviour and mental state of individual. The five representative personality traits are extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. Extraversion is a widely accepted trait and important concept in personality psychology and commonly defined as lively, energetic, assertive, and optimistic, which can describe individual who enjoys and be confident in the social situation (Watson and Clark, 1997). Agreeableness trait is often connected with prosocial behaviors and defined as this kind of words such as sympathetic, generous, kind, helpful, and considerate (Graziano and Eisenberg, 1997; Goldberg, 1992). Conscientiousness usually “refers to conformity and socially

prescribed impulse control” (Hogan and Ones, 1997, p. 849) and is a trait to describe people who are responsible, hardworking, thorough, and organized. Neuroticism is a trait that associated with negative emotional personality which includes nervous, moody, and worrying (Goldberg, 1992). Openness to experience is a continuum to describe how people process experience and it seems that artists can be a good example to present this trait which can be regarded as creative, curious, intelligent, and adventurous (McCrae and Costa, 1997). These five factors are extensive and consistent in different personality studies, so the FFM traits are also called the Big Five (Goldberg, 1981). Although some researchers think the Big Five is a controversial model (e.g. Block, 1995; Eysenck, 1993), these five basic personality dimensions have gradually been accepted and applied in practice by many psychologists.

The relationship between personality and well-being is now increasingly noticed and studied by researchers in positive psychology. However, compared with subjective well-being, there are fewer studies on the relation between the Big Five and psychological well-being and these show different results (Grant, et al., 2009). Schmutte and Ryff (1997) studied the Big Five and the six dimensions of psychological well-being and showed that neuroticism, extraversion and conscientiousness were the most powerful and persistent factors to predict psychological well-being. There was a strong negative correlation between neuroticism and self-acceptance or environmental mastery, and neuroticism also had a negative correlation with purpose in life, personal growth and autonomy to some extent. There was also a positive medium degree correlation between extraversion and self-acceptance, personal growth and positive relation with others. Conscientiousness was associated with self-acceptance, environmental mastery and purpose in life. Nevertheless, after eliminating the influence of confounding in the measurements of personality and well-being, such as the overlap of some items in measurement, the deviation of the method, the relation between psychological well-being and personality traits was limited, and in some dimensions it didn't even reach a significant level. Neuroticism was only negatively correlated with self-acceptance and extraversion was linked to self-acceptance, environmental mastery, purpose in life and personal growth. Openness to experience and personal growth had some degree of correlation. There was a relation between agreeableness and positive relation with others. Meanwhile, there was no significant

correlation between conscientiousness and any dimension of psychological well-being. Overall, the Big Five traits had stronger and more complex relationships with psychological well-being than subjective well-being. Siegler and Brummett (2000) analysed the relationship between facets in each Big Five factor and psychological well-being in a sample of 2,379 middle-aged adults and found that there were strong negative correlations between purpose in life and all facets of neuroticism. In the study by Keyes, et al. (2002), people with high levels of both psychological and subjective well-being tended to have higher levels of extraversion and conscientiousness and lower average for neuroticism. To sum up, prior studies have shown that all Big Five personality traits are associated with psychological well-being. In addition, these pairs (extraversion with positive relations, conscientiousness with personal growth and purpose in life, and openness with personal growth) have larger or more consistent links than others (Grant, et al., 2009).

2.3 Big Five personality traits and religion

Religion appears to “influence personality and is influenced by it through both genetic and environmental forces” (Koenig, et al., 2012, p. 280). The first meta-analysis of studies in this area included eight independent samples which measured religion and the FFM personality traits (Saroglou’s (2002)). Koenig and colleagues’ (2012) later systematic review included all related studies since 2000 (see Table 1).

Table 1

Associations between religion and personality traits in different studies (since year 2000)

	Positive	Negative	No Association	No. of studies
Neuroticism	9%	24%	61%	54
Extraversion	38%	6%	54%	50
Openness to Experience	42%	12%	38%	26
Conscientiousness	63%	3%	30%	30
Agreeableness	87%	0%	7%	30

Note. When percentages do not add to 100%, the missing percentage of studies are those with

mixed or complex results which include both positive and negative associations in different religion dimensions.

Source: Koenig, et al., 2012, p. 281.

As the result of the largest percentage of the reviewed studies reported that there was no association in neuroticism in Table 1, MacDonald (2000) tested 938 undergraduates in Canada and found that no matter which method he chose to measure the religion/spirituality (using Cognitive Orientation toward Spirituality (COS) scale or Religiousness (REL) scale), there was no relationship between neuroticism and religiosity. He also reported both COS and REL were significantly positively linked to extraversion, conscientiousness and agreeableness (all $p < 0.001$). By using data from the Terman Longitudinal Study which investigating 492 adolescents from 1922 (personality traits were measured) to 1941 (religion was assessed by a four-item scale), McCullough et al. (2003) examined the effects of personality in young age on religion in middle age and found that adult religion level could be only predicted by conscientiousness (controlling for religious upbringing which might influence young people's religion). Due to the limitation of the original data, McCullough and colleagues (2005) examined another existing sample to find the predictors of religious development. Religiosity was assessed by a single observer-rated item and personality traits (neuroticism, extraversion, conscientiousness, and agreeableness) were measured by self-report questionnaire. Agreeableness was the only trait that could strongly predict the change of religious degree this time (controlling for religious upbringing and sociodemographic characteristics) (McCullough, et al., 2005). In another longitudinal study, conscientiousness could predict religiosity in late adulthood and agreeableness was weak in predicting religiousness. However, this study had the similar limitations as the Terman studies, such as "researchers could not rule out that religiousness had already helped form personality" (Koenig, et al., 2012, p. 286) when the subjects participated in the investigation.

Based on many existing related studies, the relationship between personality traits and religion is likely to be complex and confusing. For instance, it seems that religious people might be more agreeable, conscientious, and less open to new experiences, while people with

some kinds of personality might feel shy to join in religious groups or activities which could influence their religious involvement (Koenig, et al., 2012). It is hard to judge “whether religion has more of an effect on personality or vice versa” (Koenig, et al., 2012, p.294), therefore more studies with better methodology such as longitudinal investigations in the future are needed to work out this question.

2.4 Religion and well-being

Compared with people with no religion, that religion is positively linked to the well-being of religious people has been supported in many empirical studies. Faith can turn inner thoughts into language and social traditions to some extent which helps others to understand them and religion plays an important role in religious people's life because it is concerned with the final goal and moral values. For example, “it is widely assumed that religion plays a positive role in providing a sense of identity, a network of social support, and a coherent framework for responding to existential questions” (Ivtzan, et al., 2011, p.915) and religion can also help people to face or deal with unfortunate events or loss in their life (Pargament, 1997; Ellens, 2007). Koenig, et al. (2012) analyzed 224 quantitative studies of religion and well-being and found 175 of them (78.1 percent) demonstrated that there are positive correlations between religiousness and well-being, eight studies (3.5 percent) demonstrated mixed findings (both positive and negative associations) and 17 percent reported no relationship between them. Frazier, et al. (2005) conducted the study of religious involvement and psychological well-being among urban elderly African Americans and found that those participants’ religious involvement in several factors such as Organizational, Nonorganizational, and Subjective were associated positively with five dimensions of psychological well-being (Positive Relations with Others, Self-Acceptance, Environmental Mastery, Purpose in Life, and Personal Growth). Seligman (2004) found that religion provides a consistent belief system that enables people to discover the meaning of life and feel hopeful about the future. It could be helpful to the improvement of self-concordance, which then promotes the happiness level.

Some studies have reported different results such that religion had mixed effects (dependent

on different dimensions in religion) or even no association with well-being (Koenig, et al., 2012). In 2001, Ellison, et al. examined a dataset of sample which included 1,139 adults to find the relationships between religious involvement (church attendance, personal prayer, and belief in an afterlife) and psychological well-being. The results showed that religious attendance and belief in an afterlife were both positively related to psychological well-being while frequency of personal prayer had negative correlation with well-being (Ellison, et al., 2001). There were similar findings in the study of Toussaint and colleagues (2001) who found religious attendance was positively related to life satisfaction and frequency of prayer was negatively linked to life satisfaction in a younger adult sample who live in US. Goldstein (2007) tested the influence of cultivating sacred moments in daily life on psychological well-being and showed that religious involvement could not have better performance on increasing almost all measures of psychological or subjective well-being. Life satisfaction, as an important index of subjective well-being, could not be predicted by any religious characteristics of parents (Petts and Knoester, 2007) and had no connection with presence of religious faith among 8,665 adult samples in selected East Asian countries (Yamaoka, 2008) which might show the cross-cultural differences.

There are few studies investigate well-being, personality, and religion together and they mainly pay attention to the subjective well-being or happiness. For example, in some studies, they only examined that whether religion could predict subjective well-being by controlling for personality and the results were negative (Francis, et al., 2003; Robbins, et al., 2008). It would be meaningful in this study to find if change subjective well-being into six dimensions of psychological well-being, whether religion can predict them after controlling the Big Five personality traits in a different sample (MIDUS 3).

3 Method

3.1 Participants

Participants in this study were drawn from the National Survey of Midlife Development in the United States (MIDUS 3). The MIDUS was firstly conducted by the MacArthur Midlife Research Network in 1995 - 1996 to find the possible factors such as behavioural or

psychological states which might lead to age-related differences in physical and mental health by investigating thousands of US adults (MIDUS 1) (Ryff, et al., 2016). MIDUS 3 was the third wave of longitudinal multidisciplinary survey in 2013 and all the samples were noninstitutionalized, English-speaking midlife adults of the United States who had completed the MIDUS2 phone interview before. Data collection included computer-assisted telephone interview (CATI), cognitive assessment test and mail questionnaire and the whole investigating procedures lasted more than one year (May 2013 through November 2014). Specifically, Researchers recruited 4,460 participants aged 40 to 94 in 2013 by making a 45-minute telephone interview, then completing a 100-page mail questionnaire and finally a 25-minute cognitive telephone interview. There were 3,294 respondents who completed the first telephone interviews, 2,732 finished self-administered questionnaires (SAQs), and 2,693 completed the cognitive interviews. To sum up, the response rate for the MIDUS 3 telephone interview, self-administered questionnaires, and cognitive assessment were 77%, 83%, and 83% respectively.

The original data includes 3,294 participants and 45.05% (1,484) of them were male. The mean age of the subjects was 63.64 (SD = 11.35) years and the age ranged 39 to 93 years. The detailed demographic information (sex, age and education background) of the samples is shown in Table 2.

Table 2

Sample Characteristics of the MIDUS 3 Sample (N= 3,294)

Demographic Variable	Breakdown	Frequency	Percentage
Gender	Male	1484	45.05%
	Female	1810	54.95%
Age	under 50	458	13.90%
	51-60	945	28.70%
	61-70	956	29.02%
	71-80	656	19.91%
	above 80	279	8.47%

Education Background	High school or below	955	28.99%
	Bachelor's degree	1747	53.04%
	Master's degree	411	12.48%
	PhD or equal	170	5.16%

3.2 Measures

3.2.1 Personality traits

In MIDUS 3, personality traits were measured with a 26-item self-administered scale which added one item for conscientiousness to the scale in MIDUS 2 to obtain better alpha internal consistency coefficient. The scale assessed Big Five personality factors and it was called Midlife Development Inventory (MIDI) which selected items from previous trait lists and questionnaires (Bem, 1981; Goldberg, 1992; John, 1990; Lachman and Weaver, 1997; Trapnell and Wiggins, 1990). Each item was an adjective with participants rating how much these words could describe them (scores ranged from 1 = A lot to 4 = Not at all). If a participant completed at least half of the items on one trait, the mean score of this trait could be regarded as a valid data. Each personality trait was calculated by the mean score of each set of items (items marked with (R) were reverse-coded) (Ryff, et al., 2016) and higher scores reflected higher standings in each factor (Keyes et al., 2002). Neuroticism included moody, worrying, nervous, and calm (R). Extraversion was described as outgoing, friendly, lively, active, and talkative. Creative, imaginative, intelligent, curious, broad-minded, sophisticated, and adventurous were used to evaluate Openness to Experience. Organized, responsible, hardworking, careless (R), and thorough were mentioned in Conscientiousness and Agreeableness consisted of helpful, warm, caring, softhearted, and sympathetic. The alpha coefficients in MIDUS 3 data were .714 for Neuroticism (mean = 2.059, SD = .624), .756 for Extraversion (mean = 3.082, SD = .581), .774 for Openness to Experience (mean = 2.894, SD = .541), .668 for Conscientiousness (mean = 3.394, SD = .468), and .773 for Agreeableness (mean = 3.430, SD = .499) (Keyes et al., 2002; Ryff, et al., 2016).

3.2.2 Psychological well-being

The factors of psychological well-being were based on Ryff's (1989) six dimensions model of psychological well-being (Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-Acceptance). Each dimension had seven items and participants rated in how much degree these items could describe their thoughts and feelings, with scores ranged from 1 = Strongly agree to 7 = Strongly disagree. If a case completed at least four items on one scale, this scale could be considered as a valid value and the item with a missing score would be imputed as the mean score of completed items. Each scale was constructed by calculating the sum of each set of items (items marked with (R) were reverse-coded) (Ryff, et al., 2016) and higher scores reflected higher standings in each factor. The alpha coefficients Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-Acceptance are .692, .795, .752, .774, .723, and .844 respectively. Although the alpha internal consistency coefficients are good in each dimension of psychological well-being, it would be necessary to test the alpha reliability of overall psychological well-being which could be used in further analysis. Based on the dataset of MIDUS 3, the alpha reliability estimates of psychological well-being is .891.

3.2.3 Religion

In this study, religion was measured by using scale Religious Identification. It included seven items which asked participants to rate how much these items could describe them and the scores ranged from 1 = Very to 4 = Not at all. If a participant completed at least half of the items on this scale, the mean score of it could be regarded as a valid data and the item with a missing score would be imputed as the mean score of completed items. The Religious Identification was calculated by the sum of all seven items (Ryff, et al., 2016) and higher score reflected higher standing in this factor. The alpha reliability estimate of Religious Identification was .914 (mean = 19.509, SD = 5.872).

3.3 Statistical Analysis

In this study, data were processed and analyzed by IBM SPSS Statistics (version 19.0) for Windows 10. Cronbach's alpha coefficients were calculated to evaluate the overall reliability of the Big Five, psychological well-being and religious identification scales. Gender, age and

education background differences in psychological well-being were tested by using *t* test or one way ANOVA. Bivariate correlation analysis and hierarchical multiple regression analysis were also conducted. Path analysis, based on the regression models, was used to test hypothesised links among personality traits, religion, and psychological well-being.

4 Results

4.1 Basic Information in Psychological Well-being

Table 3 shows the descriptive statistics of psychological well-being which includes overall psychological well-being levels and all six dimensions. The overall psychological well-being is constructed by calculating the sum of the scores of all dimensions and the higher scores reflects higher levels in each variable. Specifically, subjects have the highest score in positive relations with others and the lowest score in autonomy; their scores in other dimensions are similar.

Table 3

Descriptive Statistics of Psychological Well-being

Variables	Valid cases	Mean	SD
Autonomy	2724	37.280	6.690
Environmental Mastery	2724	38.494	7.508
Personal Growth	2724	38.299	6.851
Positive Relations with Others	2724	40.633	6.745
Purpose in Life	2727	38.101	7.022
Self-Acceptance	2724	38.064	8.145
Overall Psychological Well-being	2723	230.884	34.637

4.2 Difference Tests of Demographic Variables in Psychological Well-being

Demographic variables, as an objective factor, might make a difference in predicting psychological well-being. In order to clarify the psychological well-being levels of different groups, this study conducted independent samples *t* test (gender) or ANOVA on the

psychological well-being of different gender, age and education background groups. Table 4 presents mean scores and standard deviations of psychological well-being in men and women. There were gender differences in five dimensions which were Personal Growth, Positive Relations with Others, Autonomy, Environmental Mastery, and Self-Acceptance. Therefore, according to the Table 4, the scores of women for Personal Growth, Positive Relations with Others was significantly higher than that of men and men's scores in Autonomy, Environmental Mastery, and Self-Acceptance were all higher than women's.

Table 4

Different gender in psychological well-being indicators

		Mean	SD
Autonomy	male	38.079	6.395
	female	36.630	6.853
Environmental Mastery	male	39.062	7.363
	female	38.033	7.595
Personal Growth	male	37.845	6.887
	female	38.668	6.802
Positive Relations with Others	male	39.520	6.886
	female	41.537	6.490
Purpose in Life	male	38.174	7.025
	female	38.042	7.022
Self-Acceptance	male	38.490	7.993
	female	37.718	8.254
Overall Psychological Well-being	male	231.206	34.445
	female	230.622	34.802

There were significant age differences in psychological well-being (see Table 5). The level of overall psychological well-being in age between 61 and 80 was significantly higher than that of other age groups. Meanwhile, subjects with different education backgrounds differed in psychological well-being (see Table 6). Generally, those with higher education (e.g., PhD or

Masters degree) reported higher psychological well-being.

Table 5

ANOVA of psychological well-being indicators and age groups

		df	F	Sig
Autonomy	between groups	4	6.490	.000
	within groups	2719		
Environmental Mastery	between groups	4	17.824	.000
	within groups	2719		
Personal Growth	between groups	4	10.769	.000
	within groups	2719		
Positive Relations with Others	between groups	4	11.854	.000
	within groups	2719		
Purpose in Life	between groups	4	11.350	.000
	within groups	2722		
Self-Acceptance	between groups	4	11.702	.000
	within groups	2719		
Overall Psychological Well-being	between groups	4	10.104	.000
	within groups	2718		

Table 6

ANOVA of psychological well-being indicators and education groups

		df	F	Sig
Autonomy	between groups	3	7.782	.000
	within groups	2713		
Environmental Mastery	between groups	3	13.885	.000
	within groups	2713		
Personal Growth	between groups	3	67.703	.000
	within groups	2713		
Positive Relations with Others	between groups	3	5.145	.002

	within groups	2713		
Purpose in Life	between groups	3	32.128	.000
	within groups	2716		
Self-Acceptance	between groups	3	20.228	.000
	within groups	2713		
Overall Psychological Well-being	between groups	3	30.760	.000
	within groups	2712		

4.3 Correlation Analysis

The correlation analysis of the five personality factors and the dimensions of psychological well-being shows that except neuroticism, which was significantly negatively correlated with each dimension, all other personality traits were significantly positively correlated with psychological well-being (see Table 7). The results of inter-correlations of all Psychological Well-Being dimensions were shown in Table 8.

Table 7

Correlations between Personality and Psychological Well-being

	Agreeableness	Extraversion	Neuroticism	Conscientiousness	Openness
Autonomy	.116	.295	-.347	.309	.342
Environmental Mastery	.179	.373	-.497	.398	.297
Personal Growth	.296	.426	-.326	.391	.496
Positive Relations with Others	.437	.486	-.350	.290	.289
Purpose in Life	.240	.393	-.327	.419	.349
Self-Acceptance	.204	.417	-.476	.343	.344
Overall Psychological Well-being	.302	.495	-.487	.446	.437

Note. For all correlations, $p < 0.01$ (two-tailed).

Table 8

Inter-correlations of the Psychological Well-Being dimensions

Dimensions	1	2	3	4	5	6
1. Autonomy	1					
2. Environmental Mastery	0.499	1				
3. Personal Growth	0.433	0.592	1			
4. Positive Relations with Others	0.330	0.614	0.567	1		
5. Purpose in Life	0.400	0.654	0.698	0.587	1	
6. Self-Acceptance	0.491	0.769	0.620	0.648	0.688	1

Note. For all correlations, $p < 0.01$ (two-tailed).

Religion was not associated with Environmental Mastery or Personal Growth. Its respective correlations with Autonomy, Positive Relations with Others, Purpose in Life, Self-Acceptance, and Overall Psychological Well-being were $-.061$, $.171$, $.135$, $.073$, and $.079$ ($p < 0.01$, two-tailed).

4.4 Regression Analysis

Because the correlation between variables is bidirectional, it can only indicate that a relationship between variables exists and cannot determine the causal relationship. In order to further reveal the specific relations among variables, linear regression analysis was used to further analyze the prediction effect of Big Five personality traits on psychological well-being. Hierarchical multiple regression analysis was used with demographic variables as control variables to eliminate their possible confounding effect on dependent variables.

Because religion has no relation with Environmental Mastery and Personal Growth, only Autonomy, Positive Relations with Others, Purpose in Life, Self-Acceptance and overall psychological well-being were investigated. In the first model, gender, age and education level were entered as predictor variables in the regression model. Secondly, extraversion,

agreeableness, conscientiousness, neuroticism and openness to experience, as independent variables, entered the regression model, and finally, religion was entered in the model.

Table 9 indicates that the big five personality factors have a significant predictive effect on the Autonomy dimension, but religion can only increase the prediction force by 0.5% which means its prediction is quite weak. The specific standardized coefficient (Beta) of each predictor is shown in Table 10.

Table 9

Regression Model Summary of Autonomy

	R	Adjusted R Square	R Square change	<i>p</i>
Demographic variables	.158	.025	.025	.000
Personality	.505	.255	.230	.000
Religion	.510	.260	.005	.000

Table 10

Coefficients of Regression Model of Autonomy

	B	Beta	<i>p</i>	VIF
Gender	-1.056	-.079	.000	1.155
Age	.044	.072	.000	1.068
Education	.014	.002	.923	1.092
Agreeableness	-.796	-.059	.005	1.559
Extraversion	1.892	.164	.000	1.647
Neuroticism	-2.595	-.242	.000	1.108
Conscientiousness	2.727	.190	.000	1.234
Openness	2.009	.162	.000	1.626
Religion	-.081	-.071	.000	1.120

The big five personality factors have a significant predictive effect on the Positive Relations

with Others dimension, but the prediction force can only be increased by 0.2% after religion is entered in the model which means its prediction is weak (see Table 11). The specific standardized coefficients (Beta) of each factor are shown in Table 12.

Table 11

Regression Model Summary of Positive Relations with Others

	R	Adjusted R Square	R Square change	<i>p</i>
Demographic variables	.216	.045	.047	.000
Personality	.622	.385	.340	.000
Religion	.624	.387	.002	.001

Table 12

Coefficients of Regression Model (Positive Relations with Others)

	B	Beta	<i>p</i>	VIF
Gender	1.095	.081	.000	1.155
Age	.040	.066	.000	1.068
Education	.651	.077	.000	1.092
Agreeableness	2.913	.215	.000	1.559
Extraversion	3.757	.324	.000	1.647
Neuroticism	-2.851	-.265	.000	1.108
Conscientiousness	1.213	.084	.000	1.234
Openness	-.557	-.045	.021	1.626
Religion	.060	.053	.001	1.120

Table 13 indicates that the big five personality factors have a significant predictive effect (29.8%) on the Purpose in Life dimension, while religion can only increase the prediction force by 1.3%. The specific standardized coefficients (Beta) of each factor are shown in Table 14.

Table 13

Regression Model Summary of Purpose in Life

	R	Adjusted R Square	R Square change	<i>p</i>
Demographic variables	.180	.031	.032	.000
Personality	.575	.329	.298	.000
Religion	.587	.342	.013	.000

Table 14

Coefficients of Regression Model (Purpose in Life)

	B	Beta	<i>p</i>	VIF
Gender	-.453	-.032	.057	1.155
Age	-.050	-.079	.000	1.068
Education	1.022	.115	.000	1.092
Agreeableness	.027	.002	.923	1.560
Extraversion	2.848	.236	.000	1.648
Neuroticism	-2.466	-.220	.000	1.108
Conscientiousness	3.953	.263	.000	1.234
Openness	.973	.075	.000	1.627
Religion	.146	.122	.000	1.119

The big five personality factors can significantly predict Self-Acceptance, but the prediction force only increases by 0.1% after religion is entered in the model (see Table 15). The specific standardized coefficients (Beta) of each factor are shown in Table 16.

Table 15

Regression Model Summary of Self-Acceptance

	R	Adjusted R Square	R Square change	<i>p</i>
Demographic variables	.196	.037	.038	.000
Personality	.628	.393	.356	.000

Religion	.629	.394	.001	.043
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Table 16

Coefficients of Regression Model (Self-Acceptance)

	B	Beta	<i>p</i>	VIF
Gender	-.496	-.030	.063	1.155
Age	.051	.069	.000	1.068
Education	.900	.087	.000	1.092
Agreeableness	-.535	-.033	.085	1.559
Extraversion	4.123	.293	.000	1.647
Neuroticism	-4.815	-.368	.000	1.108
Conscientiousness	3.048	.174	.000	1.234
Openness	.898	.059	.002	1.626
Religion	.045	.032	.043	1.120

Table 17 indicates that the big five personality factors have a significant predictive effect (46.8%) on the overall level of psychological well-being; the prediction force can only be increased by 0.1% after religion is enter in the model. The specific standardized coefficients (Beta) of each factor are shown in Table 18.

Table 17

Regression Model Summary of Overall Psychological Well-being

	R	Adjusted R Square	R Square change	<i>p</i>
Demographic variables	.194	.036	.037	.000
Personality	.711	.504	.468	.000
Religion	.712	.505	.001	.036

Table 18

Coefficients of Regression Model (Overall Psychological Well-being)

	B	Beta	<i>p</i>	VIF
Gender	-.885	-.013	.386	1.155
Age	.087	.028	.049	1.068
Education	4.496	.103	.000	1.092
Agreeableness	1.530	.022	.198	1.559
Extraversion	18.303	.307	.000	1.647
Neuroticism	-19.746	-.356	.000	1.108
Conscientiousness	17.648	.238	.000	1.234
Openness	6.591	.103	.000	1.626
Religion	.179	.030	.036	1.120

Multicollinearity is a sensitive and common problem in hierarchical regression model. It not only reduces or disappears the explanatory power of variables in the equation, but also reduces the explanatory power of variables which previously entered into the regression equation. In order to find the if there is multicollinearity in the models, using the variance inflation factor (VIF) method and the values of VIF in each model are all lower than two (the criterion is if VIF is more than 10, it can indicate a multicollinearity problem) which means the Big Five personality variables and the religion variable as the independent variables of the psychological well-being regression models do not have the multicollinearity problem.

4.5 Path Analysis

Linear regression model is used to deal with direct causality between variables and can not make statistical analysis clearly in explaining recursive causal relations which include mediating effects. Path analysis can effectively solve this problem. In order to further understand the complex mechanism of how personality and religion effect on psychological well-being, path analysis was used. Based on the results of regression analysis, Autonomy, Positive Relations with Others, Purpose in Life, and Self-Acceptance were chosen to use in path analysis.

In order to build a path diagram of Autonomy, two regression models were separately built (see Table 19, and Table 20). Because Neuroticism and Conscientiousness had the non-significant p values in predicting Religion, a new regression model of Religion was built after deleting them. The variables in new model can all significantly predict dependent variable (see Table 21), therefore they can enter in the path analysis model. According to the standardized coefficients in Table 21, we can build a path diagram of Autonomy (see Figure 1). Path analysis can not only reflect the direct effect, but also reflect the indirect effect of independent variables on the dependent variable. It can be seen from Figure 1 that the direct effects of Agreeableness, Extraversion, and Openness to Experience on Autonomy are -.083, .164, and .174 respectively. The indirect effects are $.225 * (-.067) = -.015$, $.136 * (-.067) = -.009$, $-.213 * (-.067) = .014$ respectively.

Table 19

Regression Model of Personality and Religion

Dependent Variable	Independent Variable	B	Beta	p	R Square	F
Religion	Agreeableness	2.613	.222	.000	.081	46.830 ($p = .000$)
	Extraversion	1.352	.134	.000		
	Neuroticism	-.103	-.011	.568		
	Conscientiousness	.255	.020	.323		
	Openness	-2.385	-.220	.000		

Table 20

Regression Model of Personality, Religion and Autonomy

Dependent Variable	Independent Variable	B	Beta	p	R Square	F
Autonomy	Agreeableness	-1.116	-.083	.000	.249	146.527
	Extraversion	1.897	.164	.000		
	Neuroticism	-2.812	-.262	.000		
	Conscientiousness	-.009	-.015	.988		

Conscientiousness	2.525	.176	.000	(p = .000)
Openness	2.156	.174	.000	
Religion	-.076	-.067	.000	

Table 21

New Regression Models of Personality and Religion

Dependent Variable	Independent Variable	B	Beta	p	R Square	F
	Agreeableness	2.649	.225	.000		
Religion	Extraversion	1.379	.136	.000	.081	77.573
	Openness	-2.310	-.213	.000		(p = .000)

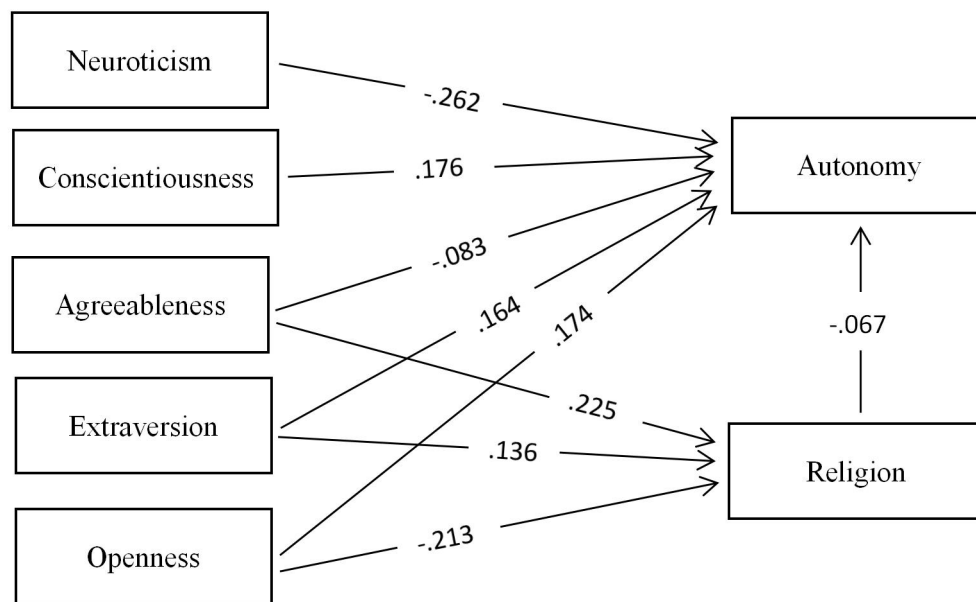


Figure 1 Path Diagram of Personality, Religion and Autonomy

The similar process of analysis was used in building a path diagram of Positive Relations with Others. According to the standardized coefficients in Table 21 and Table 22, we can build a path diagram of Positive Relations with Others (see Figure 2). It can be seen from Figure 1 that the direct effects of Agreeableness, and Extraversion on Positive Relations with Others

are .233, and .298 respectively. The indirect effects are $.225 * .072 = .016$, $.136 * .072 = .010$ respectively.

Table 22

Regression Model of Personality, Religion and Positive Relations with Others

Dependent Variable	Independent Variable	B	Beta	<i>p</i>	R Square	F
Positive Relations With Others	Agreeableness	3.139	.233	.000	.375	318.915 (<i>p</i> = .000)
	Extraversion	3.453	.298	.000		
	Neuroticism	-2.907	-.270	.000		
	Conscientiousness	1.130	.078	.000		
	Religion	.083	.072	.000		

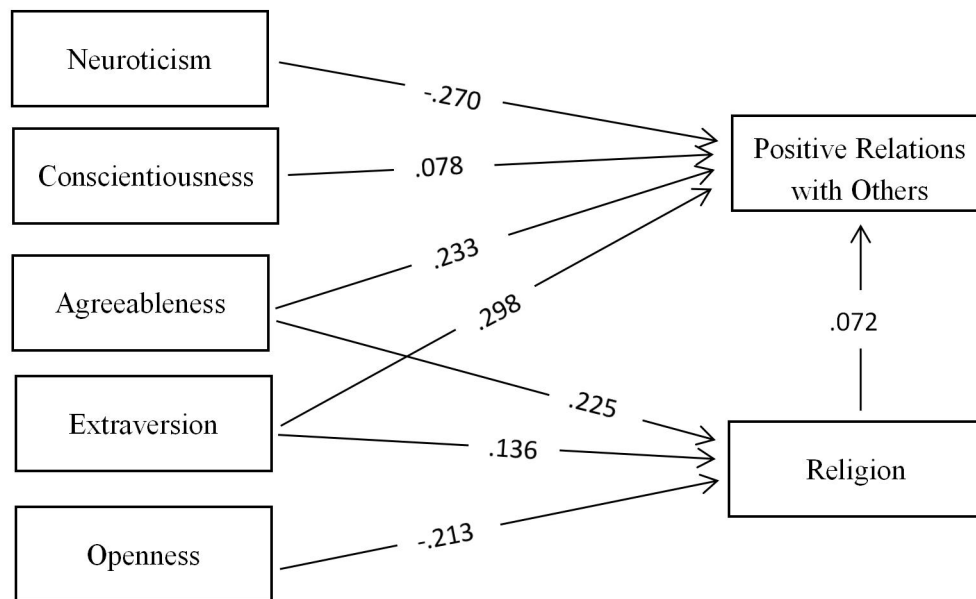


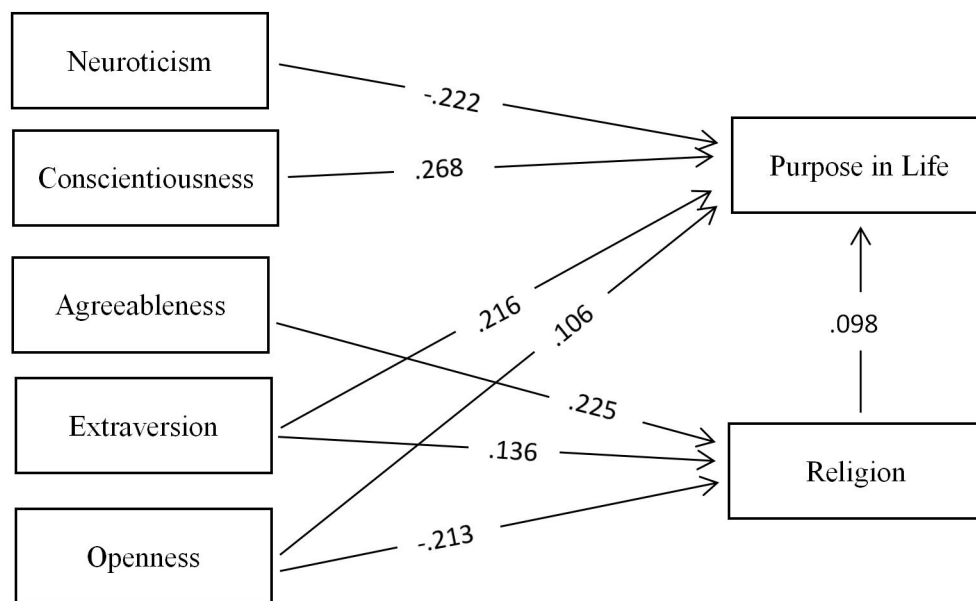
Figure 2 Path Diagram of Personality, Religion and Positive Relations with Others

According to the standardized coefficients in Table 21 and Table 23, we can build a path diagram of Purpose in Life (see Figure 3). It can be seen from Figure 3 that the direct effects of Extraversion, and Openness to Experience on Purpose in Life are .216, and .106 respectively. The indirect effects are $.136 * .098 = .013$, $-.213 * .098 = .021$ respectively.

Table 23

Regression Model of Personality, Religion and Purpose in Life

Dependent Variable	Independent Variable	B	Beta	<i>p</i>	R Square	F
Purpose in Life	Extraversion	2.606	.216	.000	.321	251.561 (<i>p</i> = .000)
	Neuroticism	-2.495	-.222	.000		
	Conscientiousness	4.031	.268	.000		
	Openness	1.380	.106	.000		
	Religion	.117	.098	.000		

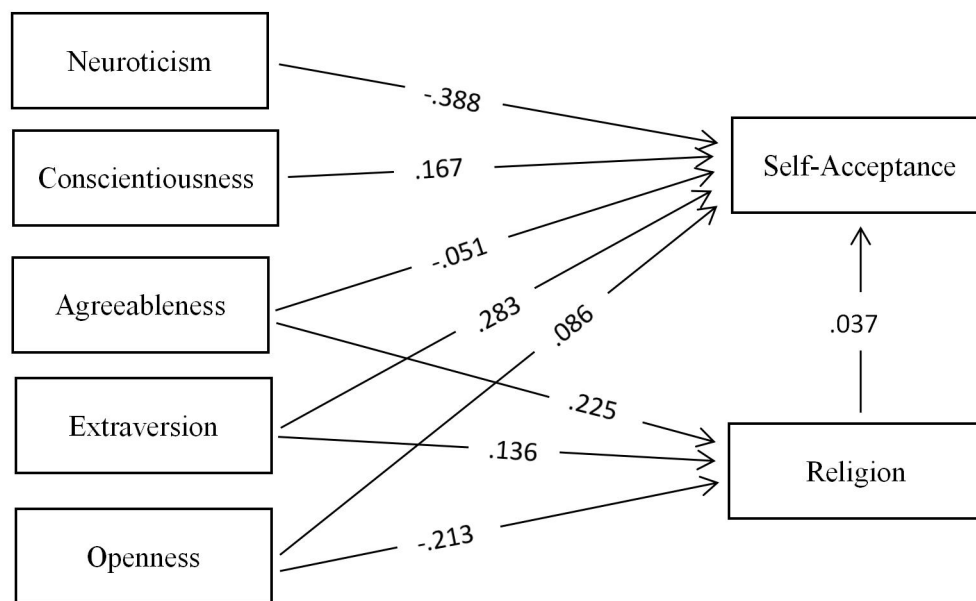
**Figure 3** Path Diagram of Personality, Religion and Purpose in Life

According to the standardized coefficients in Table 21 and Table 24, we can build a path diagram of Self-Acceptance (see Figure 4). It can be seen from Figure 4 that the direct effects of Agreeableness, Extraversion, and Openness to Experience on Self-Acceptance are -.051, .283, and .086 respectively. The indirect effects are $.225 * .037 = .008$, $.136 * .037 = .005$, $-.213 * .037 = -.008$ respectively.

Table 24

Regression Model of Personality, Religion and Autonomy

Dependent Variable	Independent Variable	B	Beta	<i>p</i>	R Square	F
Self-Acceptance	Agreeableness	-.829	-.051	.006	.383	274.843 (<i>p</i> = .000)
	Extraversion	3.990	.283	.000		
	Neuroticism	-5.087	-.388	.000		
	Conscientiousness	2.927	.167	.000		
	Openness	1.301	.086	.000		
	Religion	.052	.037	.019		

**Figure 4** Path Diagram of Personality, Religion and Self-Acceptance

5 Discussion

The present study firstly examined the three demographic variables which might have influences on psychological well-being. The results of *t* test showed that there were gender differences in five dimensions of psychological well-being and only purpose in life did not have significant gender differences which were different from previous studies. For instance, Ryff (1989) found that Positive Relations with Others and Personal Growth of women scored

significantly higher than that of men. Therefore, gender could become an independent variable to predict those two dimensions. However, in his later research (Ryff and Keyes, 1995), women only had better performances in Positive Relations with Others, and there were no significant gender differences in other five dimensions. Meanwhile, age and education background as the factors which might change people's situation in social structure (Keyes, et al., 2002), were confirmed to make a difference in all dimensions of psychological well-being in this study. The results suggested that the adults with age between 61 and 70 who were in the median age of the MIDUS 3 sample were usually had the highest scores in each dimension, which were similar to those of previous studies. Ryff (1989) divided subjects into three groups: young group ($M = 19.53$), middle-aged group ($M = 49.85$) and older group ($M = 74.96$), then he found that the middle-aged man in Purpose in Life and Personal Growth scored significantly higher than the older people, and also had higher scores than young group on the Autonomy and Environmental Mastery. When considering the education, Keyes et al. (2002) assumed that people with the educational advantage would be in the higher level of psychological well-being and their study results demonstrated there was a mean difference in psychological well-being by education although the correlation between them was small.

Using the sample of MIDUS 3, this study found that the Big Five personality traits all had associations with each dimension of psychological well-being. The previous studies usually linked personality to subjective well-being and were rarely focusing on the relations between personality and psychological well-being. However, unlike the studies of subjective well-being which mainly focused on the neuroticism and extraversion (Grant, et al., 2009), the results of correlation analysis in the present study indicated that neuroticism was negatively related to psychological well-being, and all other traits had positive correlations with either each dimension or overall level of psychological well-being in significant statistical level. Furthermore, religion was also confirmed to be associated with Autonomy, Positive Relations with Others, Purpose in Life, Self-Acceptance, and Overall Psychological Well-being, and four personality factors (except neuroticism).

In order to find how Big Five personality traits and religion specifically predict the

psychological well-being, build hierarchical regression models by controlling demographic variables and find that personality can strongly predict the psychological well-being dimension and religion can also add the prediction force. Ryff (1989) believed that the measurement of psychological well-being involved less emotional response, so it was more stable and less susceptible to changeable life events. Personality, as a stable trait which can influence behaviour, has more consistency with psychological well-being and therefore become a high predictive effect. Through further analysis of the results of the multiple regression analysis, it was found that although adding the big five personality factors to the regression model could significantly improve the prediction force of the whole model; there were significant differences in to what degree each personality trait can predict psychological well-being dimension. For instance, agreeableness was not significant in predicting Purpose in Life, Self-Acceptance, and Overall Psychological Well-being. Because agreeableness is a prosocial personality which reflects if people are caring or helpful when getting along with others (Graziano and Eisenberg, 1997), when dimensions Purpose in Life and Self-Acceptance focus more on individual's feeling or self-recognition and less on relations with others, it would not be strange that agreeableness trait can hardly predict these two dimensions. In the hierarchical multiple regression equations, after the second step that the big five personality factors were added into multiple regression models, the strength of regression equation to predict psychological well-being dimension significantly increased, then after the third step that religion was into the analysis, the predictive power of the model was also improved. Hierarchical regression will introduce the thought of control variables into multiple regression analysis, and the analysis of multiple regression statistical results should also consider the increase of prediction force of the model after adding the control variables. Personality traits were regarded as the antecedent variables of religion. Therefore, the present study determined that the second step was putting personality traits into the regression model and religion factor should be the third step by controlling both demographic variables and personality variables into the model.

Hierarchical regression analysis and path analysis showed that the Big Five personality traits on psychological well-being had not only direct effect, but also indirect effect via religion,

and religion was a weak mediator between the Big Five personality traits and some psychological well-being dimensions. Neuroticism, Conscientiousness and Extraversion were significant predictors in all six dimensions of psychological well-being which confirmed the findings of Grant, et al.(2009). Specifically, Extraversion is always a strong predictor with high standardized coefficient in regression models which is consistent with previous studies that it is positively linked to well-being and other aspects of positive functioning and this link is a stable result in related research (Aghababaei, et al., 2015; Lucas, et al., 2008). Meanwhile, the present study also confirmed that Extraversion had weak positive relation with religion and it is in line with the results of Saroglou's meta-analysis (Saroglou, 2002). Neuroticism was another predictor with significant negative effect in each psychological well-being dimension. It is regarded as a trait to evaluate whether the emotional state of individuals are stable and people with high level of neuroticism can not get high scores in psychological well-being (Bardi and Ryff, 2007). Religion was a good predictor in Positive Relations with Others, and the reason of it might be that one of the important roles of religion is it can provide social support for members in the religious group and help them to improve their interpersonal relationships (Argyle, 2005). However, religion can only increase small predictor force by controlling personality, and its coefficients in regression models or path analysis were both lower than personality traits which might occur because of its low correlations with personality in this study.

The limitations of this research were the measurement of religion and the method of statistical analysis. Religion had only one dimension -- religious identification and it would be useful to use more scales such as religious involvement scale or Multi-Religion Identity Measure (Abu-Rayya, et al., 2009) to have a more accurate evaluation of subject's religious state. Meanwhile, it would be meaningful to choose Structural Equation Model (SEM) to set religion as a latent variable which includes more dimensions to find its mediating effect between personality and psychological well-being in the future study.

6 Conclusion

This study has tried to find the relationships among psychological well-being, religion and

personality. By using the dataset from MIDUS 3, the Big Five personality traits, six dimensions of psychological well-being and religious identification were all investigated by scales with high reliability and were chosen to be used in analysis. There were individual differences in psychological well-being when gender, age and education background were considered. The scores of women in Personal Growth, Positive Relations with Others were significantly higher than that of men. Personality traits were related to all psychological dimensions which was consistent with previous studies. Religion also had associations with Autonomy, Positive Relations with Others, Purpose in Life, and Self-Acceptance. By controlling for demographic variables (gender, age, and education), personality traits and religion were both significant predictors in hierarchical regression model of psychological well-being. Personality had strong prediction force and religion could also increase weak force in predicting independent variable in model. Path analysis were used to confirm that religion was a mediator between personality traits and some dimensions of psychological well-being (Autonomy, Positive Relations with Others, Purpose in Life, and Self-Acceptance). Extraversion, Neuroticism and Conscientiousness were significant predictors in all path models and mediating effect of religion was small. Due to the limitation of the scale in the religion measurement, the relations among psychological well-being, personality and religion with more aspects are needed to be analysed in further research.

References

- Abu-Rayya, H. M., Abu-Rayya, M. H., & Khalil, M. (2009). The Multi-Religion Identity Measure: A new scale for use with diverse religions. *Journal of Muslim Mental Health, 4*(2), 124-138.
- Aghababaei, N., Błachnio, A., Arji, M., Chiniforoushan, M., & Mohammadtabar, S. (2015). The relations among well-being outcomes, religiosity, and personality. *Polish Psychological Bulletin, 46*(3), 460-468.
- Argyle, M. (2005). *Psychology and religion: An introduction*. Routledge.
- Block, J. (1995). A contrarian view of the five-factor approach to personality description. *Psychological bulletin, 117*(2), 187-215.
- Bem, S. L. (1981). *Bem Sex-Role Inventory Manual*. Palo Alto, CA: Consulting Psychologists Press.
- Bardi, A., & Ryff, C. D. (2007). Interactive effects of traits on adjustment to a life transition. *Journal of Personality, 75*(5), 955-984.
- Diener, E. (1984) Subjective well-being. *Journal of Psychological Bulletin, 95*(3), 542-575.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*(2), 276-302.
- Ellens, J. H. (2007). *Radical grace: How belief in a benevolent God benefits our health*. Westport, Connecticut: Praeger.
- Elliott, M., & Hayward, R. D. (2007). Religion and the search for meaning in life. *Journal of Counselling Psychology, 53*, 80-93.
- Ellison, C. G., Boardman, J. D., Williams, D. R., & Jackson, J. S. (2001). Religious involvement, stress, and mental health: Findings from the 1995 Detroit Area Study. *Social forces, 80*(1), 215-249.
- Eysenck, H. J. (1993). Creativity and personality: Suggestions for a theory. *Psychological inquiry, 4*(3), 147-178.
- Francis, L. J., Ziebertz, H. G., & Lewis, C. A. (2003). The relationship between religion and happiness among German students. *Pastoral psychology, 51*(4), 273-281.
- Frazier, C., Mintz, L. B., & Mobley, M. (2005). A Multidimensional Look at Religious

- Involvement and Psychological Well-Being Among Urban Elderly African Americans. *Journal of Counseling Psychology*, 52(4), 583 - 590.
- Goldberg, L. R. (1981). Language and individual differences: The search for universals in personality lexicons. *Review of personality and social psychology*, 2(1), 141-165.
- Goldstein, E. D. (2007). Sacred moments: Implications on well-being and stress. *Journal of clinical psychology*, 63(10), 1001-1019.
- Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, 4, 26-42.
- Grant, S., Langan-Fox, J., & Anglim, J. (2009). The big five traits as predictors of subjective and psychological well-being. *Psychological reports*, 105(1), 205-231.
- Graziano, W. G., & Eisenberg, N. (1997). Agreeableness: A Dimension of Personality. In Hogan, R., Johnson, J. A., & Briggs, S. R. (Eds.), *Handbook of Personality Psychology*, (pp. 795-824). Elsevier.
- Hogan, J., & Ones, D. S. (1997). Conscientiousness and integrity at work. In Hogan, R., Johnson, J. A., & Briggs, S. R. (Eds.), *Handbook of Personality Psychology*, (pp. 849-870). Elsevier.
- Ivtzan, I., Chan, C. P., Gardner, H. E., & Prashar, K. (2013). Linking religion and spirituality with psychological well-being: Examining self-actualisation, meaning in life, and personal growth initiative. *Journal of religion and health*, 52(3), 915-929.
- John, O. P. (1990). The "Big Five" factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L. A. Pervin (Ed.), *Handbook of personality theory and research*, (pp. 66-100). New York: Guilford.
- Keyes, C. L., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: the empirical encounter of two traditions. *Journal of personality and social psychology*, 82(6), 1007 - 1022.
- Koenig, H., King, D., & Carson, V. B. (2012). *Handbook of religion and health*. Oxford: Oxford University Press.
- Kraut, R. (1979). Two conceptions of happiness. *The Philosophical Review*, 88(2), 167- 197.
- Lachman, M.E., & Weaver S.L. (1997). *The Midlife Development Inventory (MIDI) Personality Scales: Scale construction and scoring*. Technical report.

- Lucas, R. E., Le, K., & Dyrenforth, P. S. (2008). Explaining the extraversion/positive affect relation: Sociability cannot account for extraverts' greater happiness. *Journal of personality*, 76(3), 385-414.
- MacDonald, D. A. (2000). The Expressions of Spirituality Inventory: Test development, validation, and scoring information. *Unpublished test manual*, 1-23.
- McCrae, R. R., & Costa Jr, P. T. (1997). Conceptions and correlates of openness to experience. In Hogan, R., Johnson, J. A., & Briggs, S. R. (Eds.), *Handbook of Personality Psychology*, (pp. 825-847). Elsevier.
- McCullough, M. E., Tsang, J. A., & Brion, S. (2003). Personality traits in adolescence as predictors of religiousness in early adulthood: Findings from the Terman Longitudinal Study. *Personality and Social Psychology Bulletin*, 29(8), 980-991.
- McCullough, M. E., Enders, C. K., Brion, S. L., & Jain, A. R. (2005). The varieties of religious development in adulthood: a longitudinal investigation of religion and rational choice. *Journal of personality and social psychology*, 89(1), 78.
- Pargament, K. I. (1997). *The psychology of religion and coping*. New York: Guilford Press.
- Petts, R. J., & Knoester, C. (2007). Parents' Religious Heterogamy and Children's Well-Being. *Journal for the Scientific Study of Religion*, 46(3), 373-389.
- Robbins, M., Francis, L. J., & Edwards, B. (2008). Prayer, personality and happiness: A study among undergraduate students in Wales. *Mental Health, Religion and Culture*, 11(1), 93-99.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68 - 78.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of personality and social psychology*, 57(6), 1069 - 1081.
- Ryff, C., Almeida, D., Ayanian, J., Binkley, N., Carr, D., & Williams, D. (2016). National Survey of Midlife Development in the United States (MIDUS 3), 2013–2014. *Inter-university Consortium for Political and Social Research: Ann Arbor, MI*.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of personality and social psychology*, 69(4), 719 - 727.

- Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological inquiry*, 9(1), 1-28.
- Saroglou, V. (2002). Religion and the five factors of personality: A meta-analytic review. *Personality and individual differences*, 32(1), 15-25.
- Schmutte, P. S., & Ryff, C. D. (1997). Personality and well-being: Reexamining methods and meanings. *Journal of Personality and Social Psychology*, 73(3), 549 - 559.
- Seligman, M. E. (2002). Positive psychology, positive prevention, and positive therapy. *Handbook of positive psychology*, 2, 3-12.
- Seligman, M. E. (2004). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. Simon and Schuster.
- Seligman, M., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5-14.
- Sheldon, K. M., & King, L. (2001). Why positive psychology is necessary. *American psychologist*, 56(3), 216.
- Sieglar, I. C., & Brummett, B. H. (2000). Associations among NEO personality assessments and well-being at midlife: Facet-level analyses. *Psychology and Aging*, 15(4), 710 - 714.
- Toussaint, L. L., Williams, D. R., Musick, M. A., & Everson, S. A. (2001). Forgiveness and health: Age differences in a US probability sample. *Journal of adult development*, 8(4), 249-257.
- Trapnell, P. D., & Wiggins, J. S. (1990). Extension of the Interpersonal Adjective Scales to include the Big Five dimensions of personality. *Journal of Personality and Social Psychology*, 59, 781-790.
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of personality and social psychology*, 64(4), 678 - 691.
- Watson, D., & Clark, L. A. (1997). Extraversion and Its Positive Emotional Core. In Hogan, R., Johnson, J. A., & Briggs, S. R. (Eds.), *Handbook of Personality Psychology*, (pp. 767-793). Elsevier.
- Wilson, W. R. (1967). Correlates of avowed happiness. *Psychological bulletin*, 67(4), 294.
- Wink, P., Ciciolla, L., Dillon, M., & Tracy, A. (2007). Religiousness, spiritual seeking, and

personality: Findings from a longitudinal study. *Journal of personality*, 75(5), 1051-1070.

Yamaoka, K. (2008). Social capital and health and well-being in East Asia: a population-based study. *Social science & medicine*, 66(4), 885-899.

Appendices

PSYCHOLOGICAL WELL-BEING (MIDUS-II VERSION)

Scales/Items: (bold items – new items added to at MIDUS-II)

Autonomy [C1SPWBA2]:

Items: 7 items – Self-Administered Questionnaire, Section E, Question 1 (a, g, m, s, y, ee, kk)

- a. “I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.” (R)
- g. “My decisions are not usually influenced by what everyone else is doing.” (R)
- m. “I tend to be influenced by people with strong opinions.”
- s*. “I have confidence in my opinions, even if they are contrary to the general consensus.” (R)
- y. “It’s difficult for me to voice my own opinions on controversial matters.”
- ee. “I tend to worry about what other people think of me.”
- kk. “I judge myself by what I think is important, not by the values of what others think is important.” (R)

Environmental Mastery [C1SPWBE2]:

Items: 7 items – Self-Administered Questionnaire, Section E, Question 1 (b, h, n, t, z, ff, ll)

- b. “In general, I feel I am in charge of the situation in which I live.” (R)
- h. “The demands of everyday life often get me down.”
- n. “I do not fit very well with the people and the community around me.”
- t. “I am quite good at managing the many responsibilities of my daily life.” (R)
- z. “I often feel overwhelmed by my responsibilities.”
- ff. “I have difficulty arranging my life in a way that is satisfying to me.”
- ll. “I have been able to build a living environment and a lifestyle for myself that is much to my liking.” (R)

Personal Growth [C1SPWBG2]:

Items: 7 items – Self-Administered Questionnaire, Section E, Question 1 (c, i, o, u, aa, gg, mm)

- c. “I am not interested in activities that will expand my horizons.”
- i. “I think it is important to have new experiences that challenge how you think about yourself

and the world.” (R)

o. “When I think about it, I haven’t really improved much as a person over the years.”

u. “I have the sense that I have developed a lot as a person over time.” (R)

aa. “For me, life has been a continuous process of learning, changing, and growth.” (R)

gg. “I gave up trying to make big improvements or changes in my life a long time ago.”

mm. “I do not enjoy being in new situations that require me to change my old familiar ways of doing things.”

Positive Relations with Others [C1SPWBR2]:

Items: 7 items – Self-Administered Questionnaire, Section E, Question 1 (d, j, p, v, bb, hh, nn)

d. “Most people see me as loving and affectionate.” (R)

j. “Maintaining close relationships has been difficult and frustrating for me.”

p. “I often feel lonely because I have few close friends with whom to share my concerns.”

v. “I enjoy personal and mutual conversations with family members and friends.” (R)

bb. “People would describe me as a giving person, willing to share my time with others.” (R)

hh. “I have not experienced many warm and trusting relationships with others.”

nn. “I know that I can trust my friends, and they know they can trust me.” (R)

Purpose in Life [C1SPWBU2]:

Items: 7 items – Self-Administered Questionnaire, Section E, Question 1 (e, k, q, w, cc, oo, qq)

e. “I live life one day at a time and don't really think about the future.”

k. “I have a sense of direction and purpose in life.” (R)

q. “I don’t have a good sense of what it is I’m trying to accomplish in life.”

w. “My daily activities often seem trivial and unimportant to me.”

cc. “I enjoy making plans for the future and working to make them a reality.” (R)

oo. “Some people wander aimlessly through life, but I am not one of them.” (R)

qq. “I sometimes feel as if I've done all there is to do in life.”

Self-Acceptance [C1SPWBS2]:

Items: 7 items – Self-Administered Questionnaire, Section E, Question 1 (f, l, r, x, dd, jj, pp)

f. “When I look at the story of my life, I am pleased with how things have turned out.” (R)

- l. “In general, I feel confident and positive about myself.” (R)
- r. “I feel like many of the people I know have gotten more out of life than I have.”
- x. “I like most parts of my personality.” (R)
- dd. “In many ways I feel disappointed about my achievements in life.”
- jj. “My attitude about myself is probably not as positive as most people feel about themselves.”
- pp. “When I compare myself to friends and acquaintances, it makes me feel good about who I am.” (R)
- Coding: 1 Strongly agree; 2 Somewhat agree; 3 A little Agree; 4 Neither agree or disagree; 5 A little disagree; 6 Somewhat disagree; 7 Strongly disagree.

PERSONALITY TRAITS

Scales/Items:

Respondents were asked how much each of 31 self-descriptive adjectives described them (Section E, Question 6, a - ee). The adjectives measure six personality traits as follows:

Neuroticism [C1SNEURO]:

4 items – Self-Administered Questionnaire, Section E, Question 6 (c, h, m, s)

Adjectives: Moody, Worrying, Nervous, Calm (R)

Extraversion [C1SEXTRA]:

5 items – Self-Administered Questionnaire, Section E, Question 6 (a, f, k, w, aa)

Adjectives: Outgoing, Friendly, Lively, Active, Talkative

Openness to Experience [C1SOPEN]:

7 items – Self-Administered Questionnaire, Section E, Question 6 (n, q, u, v, y, bb, cc)

Adjectives: Creative, Imaginative, Intelligent, Curious, Broad-minded, Sophisticated, Adventurous

Conscientiousness [C1SCONS2]:

5 items – Self-Administered Questionnaire, Section E, Question 6 (d, i, p, x, ee)

Adjectives: Organized, Responsible, Hardworking, Careless (R), Thorough

Agreeableness (communion) [C1SAGREE]:

5 items – Self-Administered Questionnaire, Section E, Question 6 (b, g, l, r, z)

Adjectives: Helpful, Warm, Caring, Softhearted, Sympathetic

Agency [C1SAGENC]:

5 items – Self-Administered Questionnaire, Section E, Question 6 (e, j, o, t, dd)

Adjectives: Self-confident, Forceful, Assertive, Outspoken, Dominants

Coding: 1 A lot; 2 Some; 3 A little; 4 Not at all.

RELIGION

Scales/Items:

Religious Identification [C1SRELID]:

Items: 7 items – Self-Administered Questionnaire, Section N, Question 2 (a, c, e - i)

- a. “How religious are you?”
- c. “How important is religion in your life?”
- e. “How important is it for you -- or would it be if you had children now -- to send your children for religious or spiritual services or instruction?”
- f. “How closely do you identify with being a member of your religious group?”
- g. “How much do you prefer to be with other people who are the same religion as you?”
- h. “How important do you think it is for people of your religion to marry other people who are the same religion?”
- i. “How important is it for you to celebrate or practice on religious holidays with your family, friends, or members of your religious community?”

Coding: 1 Very; 2 Somewhat; 3 Not very; 4 Not at all.